(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 June 2004 (10.06.2004)

PCT

(10) International Publication Number
WO 2004/049488 A2

(51) International Patent Classification[7]: H01M 8/04

(21) International Application Number:
PCT/IB2003/005314

(22) International Filing Date:
21 November 2003 (21.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2002-338675 22 November 2002 (22.11.2002) JP

(71) Applicant *(for all designated States except US)*: **TOYOTA JIDOSHA KABUSHIKI KAISHA** [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 (JP).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **YOSHIDA, Naohiro** [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, of1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 (JP). **KURITA, Kenji** [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, of 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 (JP). **YACHI, Tomonori** [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, of 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 (JP). **KASHIWAGI, Hideki** [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, of 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 (JP).

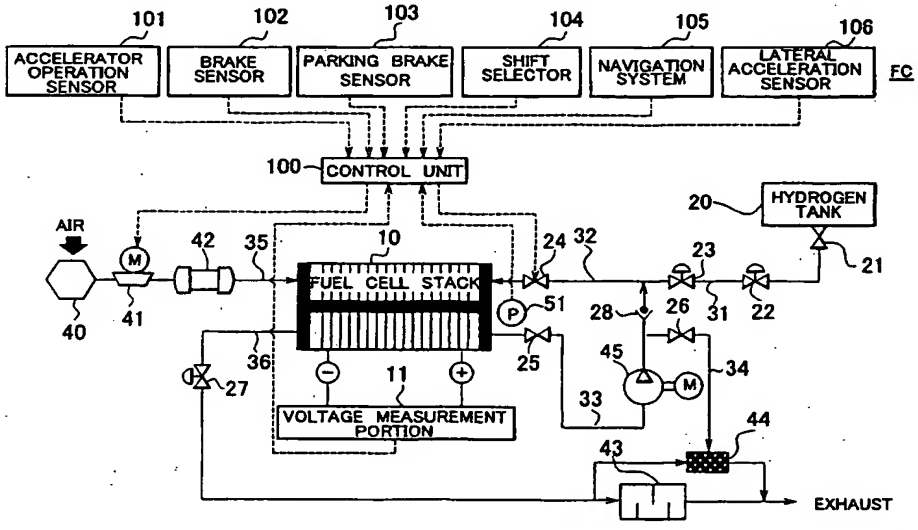
(81) Designated States *(national)*: CA, CN, KR, US.

(84) Designated States *(regional)*: European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: FUEL CELL SYSTEM, MOBILE UNIT EQUIPPED WITH THE SYSTEM, AND CONTROL METHOD FOR THE FUEL CELL SYSTEM



(57) Abstract: A fuel cell system FC replenishes a fuel cell stack with air or hydrogen by temporarily driving a compressor 41 or a low-pressure valve 24 even during an intermittent operation mode. If air is supplied for replenishment, the amount of air remaining in an air supply system is kept substantially constant, so that the voltage fall during a stop of the fuel cell system can be curbed. If hydrogen is supplied for replenishment, the amount of hydrogen moving to the air supply system is offset, so that a delay in supplying hydrogen can be curbed. Furthermore, the fuel cell system FC inputs signals from a brake sensor 102, a shift selector 104, etc., and anticipates acceleration of a vehicle equipped with the system FC. On the basis of the anticipation of acceleration, the system FC replenishes the fuel cell stack with air or hydrogen in advance.

WO 2004/049488 A2